## REMARKS/ARGUMENTS

Responsive to the Office Action of June 4, 2007, the Examiner's comments and the applied art have been noted and studied. In response, Applicants have amended Claim 1 in the manner indicated by the Examiner. The Examiner's suggestion and noting this formal matter is acknowledged. Further, the claims have been again reviewed and studied. As a result of this the claims have been amended. In the preamble of Claim 1, it has been made clear that the devices being protected are microprocessor-based devices. Support for this language in the claims is present for example on page 1, paragraph [0001] of the specification. Further, the claims have been to consistently to the device being protected by the present invention as a device, and reference to "devices" has been deleted. Finally, the claims have been amended to clarify that the protective circuit serves to reduce or eliminate noise to the microprocessor-based device from the multi-phase power distribution network. It is respectfully submitted, for reasons detailed below, that with the claims in their present form, the application is in condition for allowance.

### Prior Art

The prior art relied upon includes U.S. Patent No. 5,179,490 ("Lawrence"), U.S. Patent No. 6,040,969 (Winch) and U. S. Patent No. 6,229,682 ("Mechanic '682"). The latter patent (Mechanic '682) is commonly owned with the present application and names one of the present applicants as inventor. The Mechanic '682 and Winch patents each lack the structure of the specific L-C filter circuit arrangement in a protective circuit according to the present invention: an inductive component in series in the circuit ground lead between the utility network and the device; and a capacitor connected between the circuit ground lead between the utility network and the device, and functioning in the manner claimed. It is submitted, however, that none of the

three prior art references alone, or in combination, show, teach, or render obvious the subject matter of the claims presented herein. Further, it would defeat the stated purpose of the present invention to modify the Mechanic '682 patent circuit or Winch to include the Lawrence circuit. Thus, the present invention is not obvious in view of the prior art. It is respectfully requested that the rejections be withdrawn and Claims 1, 4, 5, and 9-14 be allowed.

**The Lawrence Reference**

Applicants would again stress the apparatus of the present invention as now claimed is significantly different from that of Lawrence. The present invention is directed to a different type of circuit and a different problem. The present invention is directed to a transient voltage surge suppressor ("TVSS") apparatus which also reduces and/or eliminates ground noise fed from a power utility outlet to microprocessor-based equipment, such as office equipment and the like, which functions as the load driven by power furnished originally from the network. This type of equipment is susceptible to interruptions in power and also to noise in the form of power transients in the power furnished to the equipment or load.

The electrical phenomenon of noise (reduction of which is the subject of the present invention) is a brief voltage differential that can appear between the ground and hot or neutral lines. The amount of noise present on a power circuit can be different at any given time. The source of this noise can originate at the electrical distribution system external to the building, from a distribution panel inside the building, or other loads on the network. The noise is the result of the power circuit's dynamic nature due to ever changing load requirements. As noted, microprocessor-based equipment, such as office equipment and the like, when connected as the load is sensitive to such noise.

In contrast, Lawrence is addressed toward the prevention of radio frequency interference ("RFI") being introduced back into the power utility lines when RFI generated in the load. Attention is directed to Column 5, line 8 and following of Lawrence:

> "When RF interference enters backwards from the LOAD [emphasis in original] (feeding the connected equipment) . . . "

When this occurs in Lawrence, the circuit of Lawrence begins a cyclic ON/OFF operation:

> "when the LOAD is generating RF interference, a cyclic ON/OFF operation of the load occurs, alerting the operator of the load to a fault or arc-over. The situation will prevail as long as LOAD generates RF interference." See Column 5, lines 25 – 29 of Lawrence

It is thus important to note that the express purpose of Lawrence is to continue cyclic operation of the load when it is generating RF interference. This repetitive power ON/OFF switching by the Lawrence circuit is done to indicate to the operator that RFI is being generated. In this manner, apparently corrective action can then apparently be taken.

However, with microprocessor-based equipment which is sensitive to voltage or power surges of the type which occur when power is interrupted, continued ON/OFF switching as done by the Lawrence circuit continues the exact situation which the present invention seeks to avoid. The harmful effect of on-off switching of Lawrence gives rise to noise to which microprocessor-based equipment or devices with the present invention are especially sensitive. As noted, these types of load are susceptible to the loss of data or the interruption of processing cycles in the program.

One cause of noise can be the difference between the potentials of two remote grounds. This is often the case when dealing with microprocessor-based equipment, such as networked computer equipment, for example. Typical effects of this can be sporadic reboots of the computer, freezing, and bad data transfer in the computer. Network interface cards, serial ports, modems, and other computer components in microprocessor-based equipment can easily fall victim to the effects of this phenomena.

Further, the Lawrence circuit components do not serve to filter ("reduce or eliminate noise" in Claim 1 of the present application) transmitted to the load ("microprocessor based devices" in Claim 1). As noted above the inductors 84, 86, 88 of Lawrence are inserted to serve as an RF choke to prevent RFI being fed into the power distribution network from the load. The capacitors 94, 96, 98 of Lawrence in conjunction with the series resistors 104, 106, 108 allow the RF generated from the load to be sensed. A charge accumulated in the capacitors, once a certain level is reached, activates the gate 64 of thyristor 60 periodically to cause the cyclic ON/OFF operation of the load, as discussed above. Thus, when the series resistor/capacitor connected circuit components sense RF from the load, the load is subject to a cyclic ON/OFF operation by periodically interrupting with thyristor 60 the load from operating power. When RF is fed backwards from the load, Lawrence's circuitry 100 (Fig. 2) causes the thyristor 60 to cyclically stop conducting, thereby interrupting all power to the load. Disabling the load is undesirable in Applicants' system because sensitive microprocessor-based electronics, such as computers, can lose data or suffer other operating problems when the power supply is interrupted.

The inductors 84, 86, 88 of Lawrence are included to reduce RFI generated by an arc over at the load and prevents the RFI from being fed back into the power utility network. (Col.

4, Lines 43-53). Thus, Lawrence could not possibly read upon the independent claims because it fails to disclose the LC circuit.

As has been note, the Lawrence reference does not indicate that its elements serve as a filter. On the contrary, as noted above, other non-filtering functions are disclosed. Further, if one were to use the Lawrence circuit as a filter as proposed between ground and neutral, it would take the form of a series arrangement of inductor 88, capacitor 98, resistor 108, resistor 106, capacitor 96 and inductor 86 as depicted in Fig. 2 of Lawrence. With the impedances as disclosed at an example RF frequency of 500 KHz, the capacitors 96 and 98 which are stated to be 350 picofarads capacitance have a reactance/impedance of somewhere near 600 ohms, while resistors 106 and 108 have resistance values of 1 MΩ , more than 1,000 times the impedance of the capacitors 96 and 98. If inductors 88 and 86 have an inductance of 1 microhenry, their reactance/impedance at 500 KHz is 0.314 Ω. The resultant attenuation provided across the load by the resistors and capacitors of the purported filter is a ration determined by the summed impedance (.628Ω) of the inductors 88 and 86 divided by the total series connected impedance which is in effect 2MΩ. It can be seen that the Lawrence circuit offers minimal filtering of the load from noise. The express purpose of the Lawrence circuit is to have a "dramatic drop" (Column 5, line 53 of Lawrence) in impedance at radio frequencies to allow diode 28 to "generate enough current to turn thyristor 62 off. (Column 5, lines 53-54). The capacitors of Lawrence are designed to operate in a low reactance in the presence of RF from the load.(Column 5, lines 60-62).

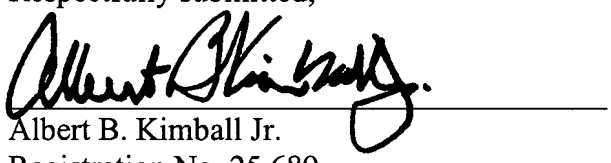
It is submitted that the applied references (particularly Lawrence), alone or in combination, fail to make obvious Applicants' invention as presently claimed for reasons set forth in detail above. Lawrence responds to the presence of detected RF by repeatedly cycling

the load on and off, which causes effects of the same type that the present invention seeks to avoid.

## Conclusion

In summary, for reasons detailed above, it is submitted the claims now present in the application are allowable. Accordingly, allowance of all claims is submitted to be in order, and such action is respectfully requested. Applicants request early notice if there are any outstanding issues that have not been addressed in this response. The Commissioner is authorized to charge any additional fees incurred in this application to Deposit Account No. 50-0259. Should the Examiner have any inquiries concerning this matter, please direct telephone calls to the undersigned at (713) 221-1377.

Respectfully submitted,



Albert B. Kimball Jr.
Registration No. 25,689

BRACEWELL & GIULIANI LLP
711 Louisiana, Suite 2300
Houston, Texas 77002
Phone: 713/221-1377
Fax: 713/221-2185
E-mail: albert.kimball@bgllp.com